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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------------|---------------------|------------------|
| 10/604,367 | 07/15/2003 | Edward Crandal Cooney, III | BUR920020066US2 | 1366 |
| 24241 | 7590 | 09/19/2005 | EXAMINER | |
| IBM MICROELECTRONICS INTELLECTUAL PROPERTY LAW 1000 RIVER STREET 972 E ESSEX JUNCTION, VT 05452 | | | VINH, LAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1765 | |
| DATE MAILED: 09/19/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,367

Applicant(s)

COONEY, III ET AL.

Examiner

Lan Vinh

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-24 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Argument

1. Applicant's arguments, see pages 6-7 of the response, filed 7/7/2005, with respect to the rejection(s) of claim(s) 1-12 under 35 U.S.C 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lin et al (US 6,777,045).

Applicant's arguments, see pages 8-9 of the response, filed 7/7/2005, with respect to the rejection(s) of claims 13-24 have been fully considered and are persuasive. The rejection of has been withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8, 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al (US 6,777,045).

Lin discloses a method of manufacturing a processing chamber. The method comprises the steps of:

etching a workpiece in a etch reaction chamber (col 2, lines 55-60) , the work piece having the dielectric layers/element (col 3, lines 1-3), the sputtering etching step resulting in the sputtered material adhered to the expose surface 422 that serves as the ceiling of the chamber (col 5, lines 33-40), which reads on a first layer of reaction products during the etch step that partially adhere to the inner chamber wall

introducing a species into the etch chamber to form a coat/layer that promote the adherence of the chamber generated particulate matter onto the surface 422/ceiling of the chamber , which reads on introducing a species into said etch chamber that increases the adhesion of said first layer of reaction products to said inner chamber walls

Regarding claim 2, Lin discloses forming a second layer 425 on the first layer (fig. 3C)

Regarding claims 3-4, Lin discloses using a sputter etch chamber (col 2, lines 55-60)

Regarding claim 5, Lin discloses that the chamber may be fabricated from quartz (col 3, lines 15-20)

Regarding claim 6, Lin discloses that the substrate/workpiece is semiconductor material

Regarding claims 7-8, Lin discloses that the workpiece having the dielectric materials such as PSG/low k material (col 3, lines 1-3)

Regarding claims 10-12, Lin discloses using a quartz plate 190/ring surrounding workpiece (col 3, lines 37-40)

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (US 6,777,045) in view of Gupta et al (US 6,020,035)

Lin method has been described above. Unlike the instant claimed invention as per claim 9, Lin fails to specifically disclose introducing species comprises silicon and oxygen into the chamber

Gupta discloses a method for reducing contamination in a plasma chamber comprises the step of introducing a species of oxygen and TEOS into the etch chamber to form a layer that covers the reaction product (col 11, lines 12-29)

One skilled in the art at the time the invention was made would have found it obvious to modify Lin by introducing a species of oxygen and TEOS into the etch chamber to deposit a seasoning/contaminant reducing layer in the chamber as taught by Gupta (col 11, lines 13-17)

Allowable Subject Matter

6. Claims 13-17 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 18-24 allowed.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471. The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LV
September 15, 2005